

Section II (Remarks)

Restriction and Withdrawal of dependent claims 2 and 34-44

In the April 8, 2008 Office Action, claims 3, 4, 12, 18, and 20-33 were withdrawn from further consideration pursuant to restriction requirement, as being drawn to a non-elected species, without a generic or linking claim.

In the Response to the April 8, 2008 Office Action, applicants cancelled claims 3, 4, 12, 18, and 20-33, amended dependent claim 2 and added new dependent claims 34-44 to further delineate the invention. Dependent claim 2 included features from cancelled claim 3, and newly added dependent claims 34-44 included substance of cancelled claims 21-31.

In the October 28, 2008 Office Action, dependent claims 2 and 34-44 were withdrawn from further consideration pursuant to restriction requirement for being “drawn to the non-elected species made without traverse and drawn to a thermal management system comprising a terminal strap or cover.” (Office Action, pg. 2, ll. 15-16)

Applicants hereby request reconsideration and reinstatement of claims 2 and 34-44 to actively examined status.

The withdrawal of claims 2 and 34-44 in the October 28, 2008 Office Action was based expressly on MPEP § 821.03 and 37 CFR 1.142, but such MPEP and CFR sections **do not support the withdrawal of these claims**. 37 CFR 1.142 specifically provides that

“§ 1.142 Requirement for restriction.

(a) If two or more **independent and distinct inventions** are claimed in a single application, the examiner in an Office action will require the applicant in the reply to that action to elect an invention to which the claims will be restricted, this official action being called a requirement for restriction (also known as a requirement for division). Such requirement will normally be made before any action on the merits; however, it may be made at any time before final action.

(b) **Claims to the invention or inventions not elected**, if not canceled, are nevertheless withdrawn from further consideration by the examiner by the election, subject however to reinstatement in the event the requirement for restriction is withdrawn or overruled.” (emphasis added)

MPEP § 821.03 provides:

“821.03 Claims for Different Invention Added After an Office Action [R-3]

Claims added by amendment following action by the examiner, MPEP § 818.01, § 818.02(a), **to an invention other than previously claimed**, should be treated as indicated by 37 CFR 1.145.” (emphasis added)

37 CFR 1.145 in turn provides:

“37 CFR 1.145 Subsequent presentation of claims for different invention.

If, after an office action on an application, the applicant presents **claims directed to an invention distinct from and independent of the invention previously claimed**, the applicant will be required to restrict the claims to the invention previously claimed if the amendment is entered, subject to reconsideration and review as provided in §§ 1.143 and 1.144.” (emphasis added)

Applicants’ claims 2 and 34-44 are NOT directed to an invention that is “distinct from and independent of the invention previously claimed,” as is required for restriction-based withdrawal. Instead claims 2 and 34-44 are claims that are **dependent from and thereby incorporate the elected invention of claim 1**. Dependent claims cannot be directed to an independent invention, since 37 CFR 1.75(c) expressly provides that

“Claims in dependent form shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim.” 37 CFR 1.75(c)

Since claims 2 and 34-44 thus include all the limitations of claim 1 from which they directly or indirectly depend, such dependent claims are directed to elected subject matter.

It therefore is requested that the withdrawal of claims 2 and 34-44 be reversed, and that such claims be restored to actively examined status, consistent with the applicable MPEP and CFR provisions above discussed.

Amendment of Claims 1, 10 and 15

Claim 1 has been amended herein to further specify the applicants' invention as

“1. A thermal management system for cooling of a high-capacity battery including a longitudinally extending top face having terminals thereon, said thermal management system comprising a plate member overlying the entire top face of the battery and parallelly aligned with said top face to form a gap therebetween, the gap at an outer side edge thereof defining a gap opening extending continuously along the full longitudinal extent of said top face, between the plate member and the top face of the battery, with said gap opening communicating with an ambient environment of the thermal management system, said plate member including at least one opening therein, wherein each plate member opening has a cylindrical collar disposed therein, with a downdraft fan mounted in the collar, and constructed and arranged to direct cooling gas from said ambient environment directly downwardly onto the top face of the high-capacity battery during at least one of (a) fast charging of the battery, and (b) use of the battery generating heat, so that the cooling gas contacting the top face of the battery flows laterally outwardly across the top face of the battery and is laterally discharged through said gap opening into the ambient environment.”

Such amended claim is fully consistent with and supported by the originally filed disclosure of the application. See, for example, page 16, paragraphs [0074] and [0075], page 17, paragraph [0079] and FIGS. 5 and 6.

Claim 10 has been amended herein to recite “multiple openings in said plate member,” as for example is shown and described in connection with FIG. 6 of the application.

Claim 15 has been amended for consistency with amended claim 1, so that claim 15 now recites

“15. A vehicle adapted to be powered by a high-capacity battery including a top face having terminals thereon, said vehicle comprising a thermal management system as claimed in claim 1 arranged for cooling of said battery.”

Accordingly, no new matter within the meaning of 35 USC 132 has been introduced by the amendments to claims 1 and 15.

Rejections of Claims 1, 5-11, 13-17 and 19 Under 35 USC 112, First Paragraph

In response to the §112, first paragraph rejection of claims 1, 5-11, 13-17 and 19, claim 1 has been amended herein to recite the fan structure in terms consistent with paragraph [0075] of the present application, and claim 15 has been amended to recite the thermal management system as claimed in claim 1.

Accordingly, the rejection of claims 1, 5-11, 13-17 and 19 is requested to be withdrawn¹.

Rejection of Claims 1, 15, 16 and 19 under 35 U.S.C. 102(b) as being anticipated by Hamada et al. (U.S. Patent 5,800,942)

In the October 28, 2008 Office Action, claims 1, 15, 16 and 19 were rejected under 35 U.S.C. 102(b) as being anticipated by Hamada et al. (U.S. Patent 5,800,942; hereinafter “Hamada”).

Such rejections are traversed in application to claims 1 and 15 as amended herein (claims 16 and 19 depending from amended claim 15).

“Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.” *W.L. Gore & Assocs. v. Garlock*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

¹ each of claims 5-11, 13, 14, 16, 17 and 19 having been rejected on §112, first paragraph grounds as being dependent on a rejected based claim.

Hamada et al. fail to disclose or provide any derivative basis for applicants' invention as recited in amended claim 1:

“1. A thermal management system for cooling of a high-capacity battery including a longitudinally extending top face having terminals thereon, said thermal management system comprising a plate member overlying the entire top face of the battery and parallelly aligned with said top face to form a gap therebetween, the gap at an outer side edge thereof defining a gap opening extending continuously along the full longitudinal extent of said top face, between the plate member and the top face of the battery, with said gap opening communicating with an ambient environment of the thermal management system, said plate member including at least one opening therein, wherein each plate member opening has a cylindrical collar disposed therein, with a downdraft fan mounted in the collar, and constructed and arranged to direct cooling gas from said ambient environment directly downwardly onto the top face of the high-capacity battery during at least one of (a) fast charging of the battery, and (b) use of the battery generating heat, so that the cooling gas contacting the top face of the battery flows laterally outwardly across the top face of the battery and is laterally discharged through said gap opening into the ambient environment.”

Hamada lacks numerous features of such claimed thermal management system, including:

- “a plate member overlying the entire top face of the battery and parallelly aligned with said top face to form a gap therebetween, the gap at an outer side edge thereof defining a gap opening extending continuously along the full longitudinal extent of said top face, between the plate member and the top face of the battery, with said gap opening communicating with an ambient environment of the thermal management system;”
- “said plate member including at least one opening therein, wherein each plate member opening has a cylindrical collar disposed therein, with a downdraft fan mounted in the collar, and constructed and arranged to direct cooling gas from said ambient environment directly downwardly onto the top face of the high-capacity battery;” and
- a structure arranged so that “cooling gas contacting the top face of the battery flows laterally outwardly across the top face of the battery and is laterally discharged through said gap opening into the ambient environment.”

Such structural features of applicants' claimed invention permit a highly focused cooling action to be imparted to the top face of the high capacity battery, with a 90° redirection of the cooling gas flow (from a "directly downward" flow onto the top face of the battery to a "laterally outwardly" and "laterally discharged" flow of coolant gas into the ambient environment through the side edge gap opening. Hamada, by contrast, seeks to effect a net downflow flux of coolant gas from top to bottom of the bundled cells shown and described in such reference.

For such reasons, amended claim 1 is patentably differentiated over Hamada et al., as are claims 15, 16 and 19 requiring the limitations of amended claim 1.

It therefore is requested that the 102 rejection of claims 1, 15, 16 and 19 be withdrawn.

Rejection of Claims 5-9, 10-11, and 13-17 under 35 U.S.C. 103

The October 28, 2008 Office Action contained multiple rejections under 35 U.S.C. 103(a), including:

- a rejection of dependent claim 14 as being unpatentable over Hamada;
- a rejection of dependent claims 5-9 as being unpatentable over Hamada, and further in view of Arai et al. (U.S. Patent No. 6,204,769);
- a rejection of dependent claims 10-11 as being unpatentable over Hamada in view of Clements et al. (U.S. Patent No. 6,690,576);
- a rejection of dependent claim 13 as being unpatentable over Hamada in view of Barrett Jr. (U.S. Patent No. 3,904,439); and
- a rejection of dependent claim 17 as being unpatentable over Hamada in view of Leskovec (U.S. Patent No. 4,355,695).

Such rejections are traversed. Inasmuch as all the foregoing rejections rely on Hamada et al. as a primary reference, and all of the claims thus rejected are dependent directly or indirectly from claim 1, or otherwise incorporate all of the limitations of amended claim 1, the additional citations of Arai et al. (cited for thermal monitoring circuitry), Clements et al. (cited for teaching of a collar housing for a fan), Barrett Jr. (cited for a hinged battery box) and Leskovec (cited for

teaching of a battery positioned below a seat of a vehicle) do not overcome all of the above-discussed deficiencies of Hamada et al. in relation to amended claim 1.

Accordingly, claims 5-11, 13-14 and 17, rejected in the Office Action on the basis of Hamada et al. in view of such secondary references, are patentable over the art, for the same reasons as advanced hereinabove in support of the patentability of claim 1 over Hamada et al.

Petition under 37 CFR 1.136 for Extension of Time

The time for responding to the October 28, 2008 Office Action was set at three months, expiring January 28, 2009. Applicants hereby petition under 37 CFR 1.136 for a one month extension of time to extend the deadline for response to March 2, 2009.

Since February 28, 2009 fell on a Saturday, the deadline for responding is automatically extended to Monday, March 2, 2009 through the operation of 37 CFR 1.7. The amount of \$65.00 specified in 37 CFR 1.17(a) for such one month extension of time is being paid by online credit card authorization at the time of EFS submission of this response.

Request for Continued Examination

Enclosed and submitted herewith is a Request for Continued Examination Transmittal (Form PTO/SB/30). In addition to the extension fee specified above, payment of the \$ 405.00 fee (small entity) specified in 37 CFR 1.17(e) for such Request is also being paid by online credit card authorization at the time of EFS submission of this response.

The amount of \$470.00, including the \$65.00 fee for a one month extension of time and the \$405.00 fee for a Request for Continued Examination, is therefore being paid by online credit card authorization at the time of EFS submission of this response.

If additional fees are due, authorization also is hereby given to charge the amount of any deficiency in fees properly due and payable, to Deposit Account No. 08-3284 of Intellectual Property/ Technology Law.

CONCLUSION

Based on the foregoing, claims 1, 2, 5-11, 13-17, 19, and 34-44 are patentably distinguished over the art, and in form and condition for allowance. The examiner is requested to consider the amendments and arguments presented herein, and to responsively issue a Notice of Allowance. If any issues require further resolution, the examiner is requested to contact the undersigned attorney at (919) 419-9350 to discuss same.

Respectfully submitted,

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<p>The USPTO is hereby authorized to charge any deficiency or credit any overpayment of fees properly payable for this document to Deposit Account No. 08-3284</p>
